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See below.

New Data

The groundwater models created for the Rosemont Project predict that even though groundwater levels will be lowered significantly, the environment at Cienega Creek will survive. Not everyone agrees, but until now no one has had solid evidence to make the assumptions of the models more accurate.

In her bright and sunny office Dr. Jennifer McIntosh greeted Dos Aguas with a warm smile and a strong handshake. She's familiar with the groundwater basins of the desert southwest, and is among the authors of a recent major study of the San Pedro Basin, one mountain range east of Cienega Creek. Their method of study uses isotopes of several elements (Oxygen, Hydrogen, Carbon, and Tritium among others), along with chemical tracers, to extract a "signature" from a water source, and then to track its movement through an aquifer. Jennifer now has a graduate student, Rachel Tucci, working on water isotope studies in the Cienega Basin, and the initial results are unexpected: unlike the San Pedro Basin (to the east) and the Tucson Basin (to the west), the springs, alluvial aquifers, and small but steady perennial flows in the Cienega Basin are consistently dominated by old water. How old? It's early in the study, the data are not all analyzed yet, so Jennifer hedges any conclusions. It's "groundwater...recharged prior to the 1950s," she has written (since most all samples have no detectable levels of tritium). But in person she emphasized that the water is *really* old. "...it's on the order of tens to hundreds of years old, or hundreds to thousands," she told Dos Aguas, "with almost no input from local precipitation." There are many questions yet to answer. How high in the mountains was this old water originally recharged? How long is the transit time from recharge to discharge? And where is the water from local precipitation ending up? Only then do the next set of challenges begin: How does this new knowledge affect the predictions of the models? What policy decisions make sense in light of any revised predictions? The investigation of Cienega Creek's old water is just beginning, but the sleuths are persistent.

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